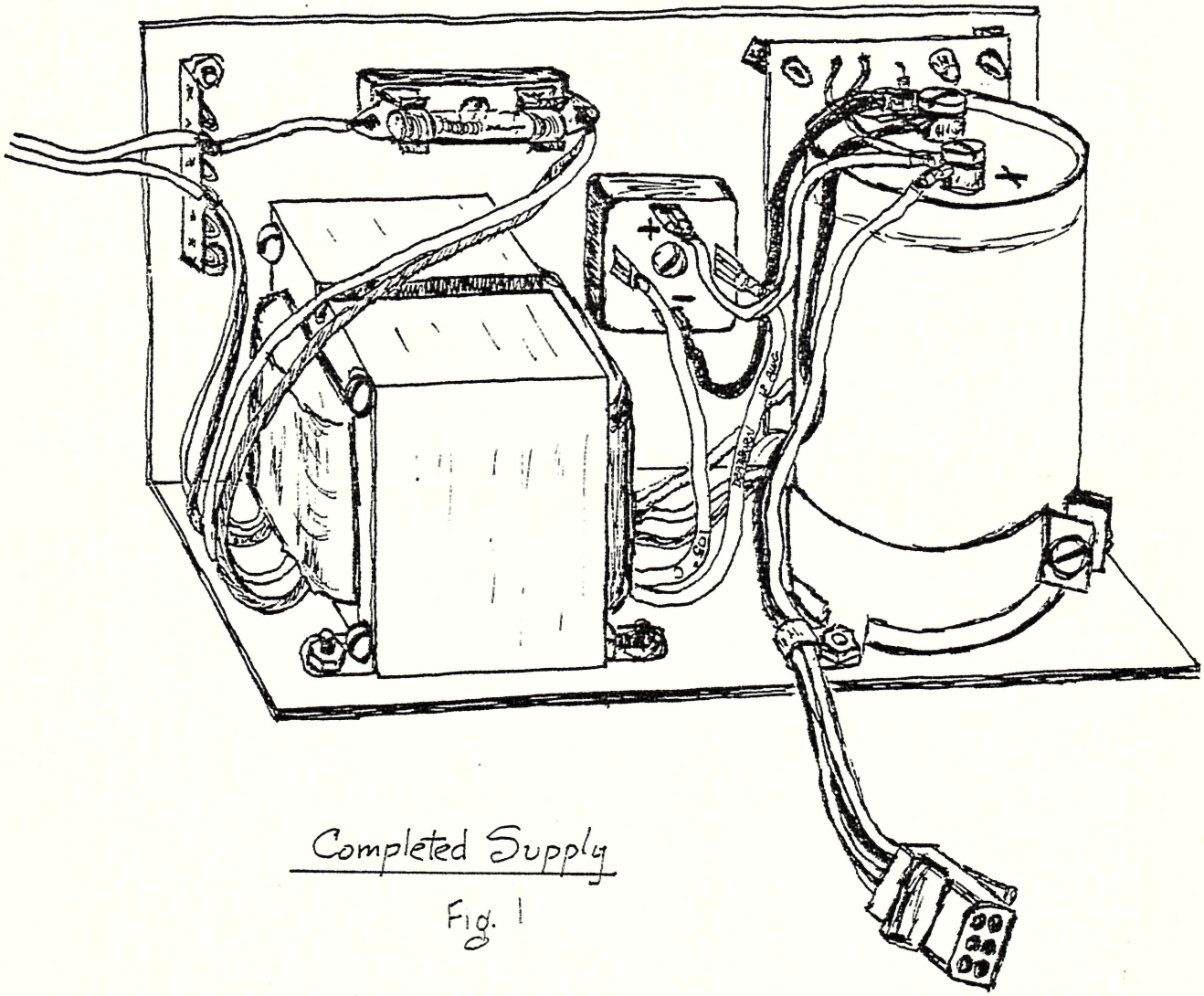
KIMSI PLUS

The Kimsi-Plus Power Supply is a compact, rugged, industrial quality power supply which has been designed specifically for powering a fully expanded Kimsi system.

Although intended for mounting inside an enclosure with Kimsi, the KPPS can also be used as a free-standing unit. Rubber feet have been included with the unit for this purpose.



Completed Supply

Fig. 1

ASSEMBLY INSTRUCTIONS

To prevent damage to the other parts in the kit, the KPPS is shipped with T1 bolted to the chassis. Remove the transformer from the chassis before beginning assembly.

Begin assembly with the small circuit board. All components are inserted from the side with the markings and lettering, and soldering takes place on the copper side.

Insert R1, R2 and R3 onto the board and solder. Insert D1-D4 near the bottom of the board being careful to orient the band on each diode to the direction shown on the board. Solder and clip these leads.

Insert the LED near the top of the board (above C3). Orient the flat side of the LED case to point downward as shown. Solder and clip the leads.

Insert C2 and C3. Pay close attention to orienting the '+' ends of these capacitors to the '+' marks shown on the board. Solder and clip these leads.

Cut two pieces of green wire 3 and 9 inches long. Cut two pieces of yellow wire 5 and 9 inches long. Cut two pieces of red wire 4½ and 9½ inches long, and two pieces of black wire 5 and 10 inches long. To connect the wires to the circuit board in the following steps, strip about ¼ inch of insulation off the wire, insert the wire in its proper location, bend the wire over to touch the copper, and solder.

Connect the short (3") piece of green wire to the hole marked 'BLK.'

Connect the short (5") piece of yellow wire to the point marked 'RED.'

Connect the 9" length of green wire to '-16' and the 9" yellow wire to '+16.'

Cut the two orange and one brown lead of T1 so that they are approximately 4" long. Attach these three wires to the circuit board at B (brown), O (orange) and O.

Find the four "tab type" terminals and notice that two have a larger "barrel" (to connect to larger diameter wire). Cut T1's two yellow leads to approximately 4", strip ¼" insulation from each wire, attach the two larger diameter tab terminals to these wires. These terminals may be "smashed" onto the wire to hold them in place during soldering. Heat the terminals thoroughly, and use plenty of solder as much of it will soak into the wire.

Set T1 and the circuit board aside.

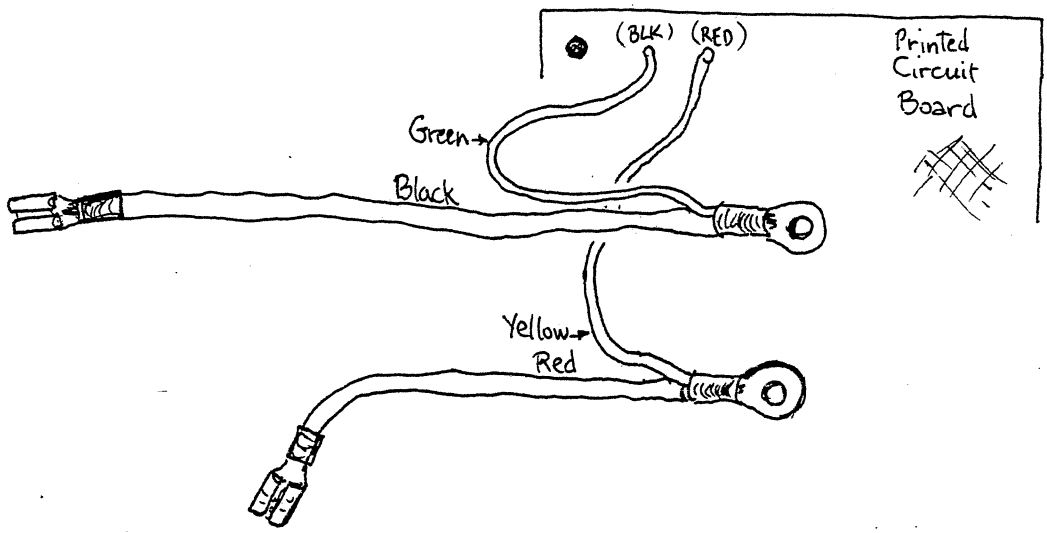
Using the shorter screws (6/32 X 3/8") mount the terminal strip and fuse holder as shown in Fig. 1. Tighten these screws. Use three more short screws to mount the bracket for C1 (insert the screws from the underside of the chassis). Do not tighten for now. Use a longer screw (6/32 X 3/4") to mount the FWB (Full Wave Bridge). Orient this part with the '+' marking upward and tighten the screw.

Find the four nylon circuit board mounts and insert the shorter end of the mount (with the two rounded tabs) into the four chassis holes to the right of the FWB. Insert them firmly so that they lock in place.

Orient T1 on the chassis with the black and white wires near the terminal strip. Mount T1 using four large (10/24) screws inserted from the underside of the chassis and four nuts topside. Tighten these screws.

Place the circuit board over the four nylon mounts and press it into place. The board should be oriented with the LED near the top edge of the chassis.

Strip ¼" of insulation from both ends of the short red and black wires and solder one tab type terminal to each wire. Find the four 'ring type' terminals and select the two which have large diameter barrels. Solder these terminals to the short red and black wires along with the wires coming from the circuit board BLK and RED points as shown below.



Strip ¼" of insulation from the ends of the long black and red wires. Solder the two remaining ring terminals to these wires (one on each wire).

Push the four tab connectors onto the FWB terminals (a pair of pliers is helpful here). The red wire goes to the '+' terminal, black to '-' and yellow to the remaining two terminals.

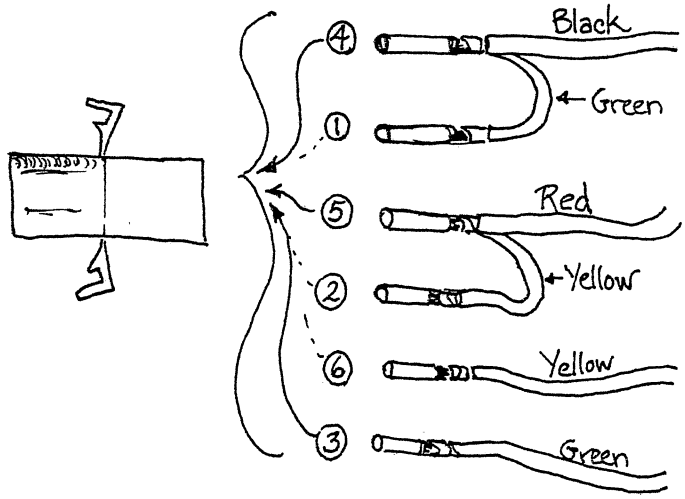
Loosen the bracket for C1 and insert the capacitor in the bracket. Turn C1 to place the negative terminal (no marking) closest to the circuit board and the positive terminal (marked '+') furthest from the circuit board. Tighten up the single screw on C1's mounting bracket. Attach the two red wires with ring terminals to the positive terminal on C1 (marked '+'). Attach the black wires with ring terminals to C1's negative terminal and tighten these screws.

Route the long yellow and green (+16 and -16) leads from the circuit board between T1 and C1. Place the cable clamp over these wires along with the red and black wires coming from C1. Remove the nut from C1's mounting screw nearest T1. Place the

cable clamp over this screw; and replace the nut. Tighten all three mounting screws for C1.

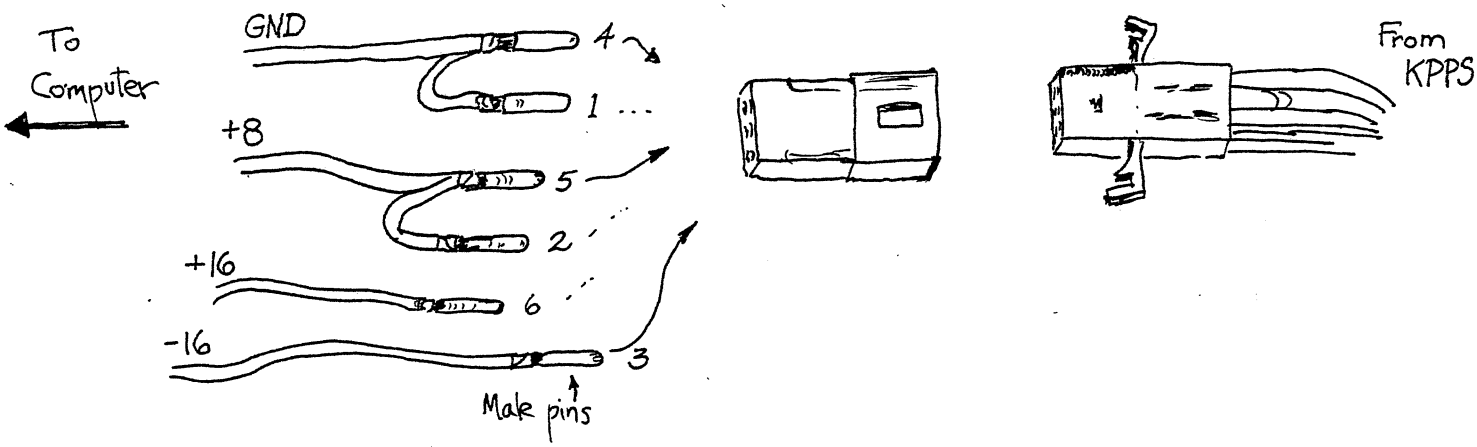
OUTPUT CONNECTOR (optional)
The included male/female power connector will allow a great deal of flexibility and convenience in configuring/servicing your system. Note that since the supply can deliver considerably more than the 9 amps per pin rating of the connector, dual pins are used for the +8 and GND (ground) lines.

Separate the two different types of pins in the kit - male and female (males have a closed rounded tip). Cut two jumpers about 1½" long) from green/yellow wire and solder six female pins to the power output leads as shown below.



using the body with the mounting tabs, insert the pins into the proper holes (as marked on the connector body). Insert both pins of the red and black pairs into the connector body before locking them into place (they will lock into place when pushed all the way into the body).

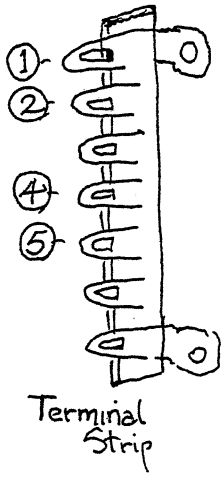
The connector to your computer is constructed in the same manner using male pins and a receptacle shell.

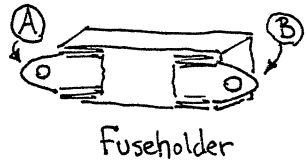


If a separate enclosure is built for the KPPS, the power connector can be mounted into a panel by bending back the two mounting ears and pushing the connecter into a 5/8 X 3/4" square hole.

INPUT POWER

The KPPS can be run on either 110VAC (USA) or 220VAC (Europe) wall voltage. To make the proper connections for either voltage refer to the diagram and terminal numbers below.





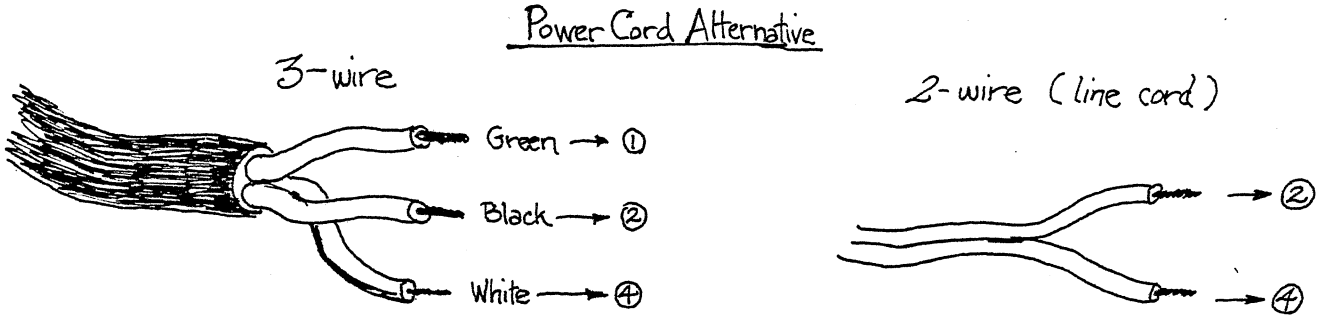
110 VOLT AC

Make the following connections from T1: Red and black to 'B' (solder), blue and white to '4' (don't solder). Use a scrap of blue wire to connect '2' and 'A' (solder 'A').

220 VOLT AC

Make the following connections from T1: Black to 'B' (solder), white and red to '5' (solder), blue to '4' (don't solder). Use a scrap of blue wire to connect '2' and 'A' (solder 'A').

Input connections from a power switch or circuit breaker are made as follows: Green to '1', black (from power switch) to '2', and white to '4'. Optionally a two or three line power cord may be connected directly to the KPPS as shown below.



TESTING

Before applying power, check that both red wires connect to the '+' terminal of C1 and that the red wire connects to the '+' terminal on the FWB. Insert the fuse in the fuse holder and plug in/turn on the unit. Turn off immediately if any smoke or strange odor is present. The LED indicates the presence of +8 voltage. If it is not lit, measure the voltage (at the output plug) between black (GND) and red (+8V). The no load voltage should be 10-13 volts. Also measure black (GND) to yellow (+18-22V) and black to green (-18 to 22V). If there is voltage present on the 8V line and the LED does not light, check for an incorrectly oriented LED or a defective LED. For problems with the + or -16V supplies, check for improperly oriented rectifers (D1-D4). This will probably be obvious as it will cause one or more smoking/popping parts when the unit is first plugged in.

After unplugging the supply, the LED will remain on until C1 is discharged. C1 should be allowed to lose most of its charge before the supply is connected to your system (this process can be hastened by putting 100 ohms or so across C1's terminals).

COOLING

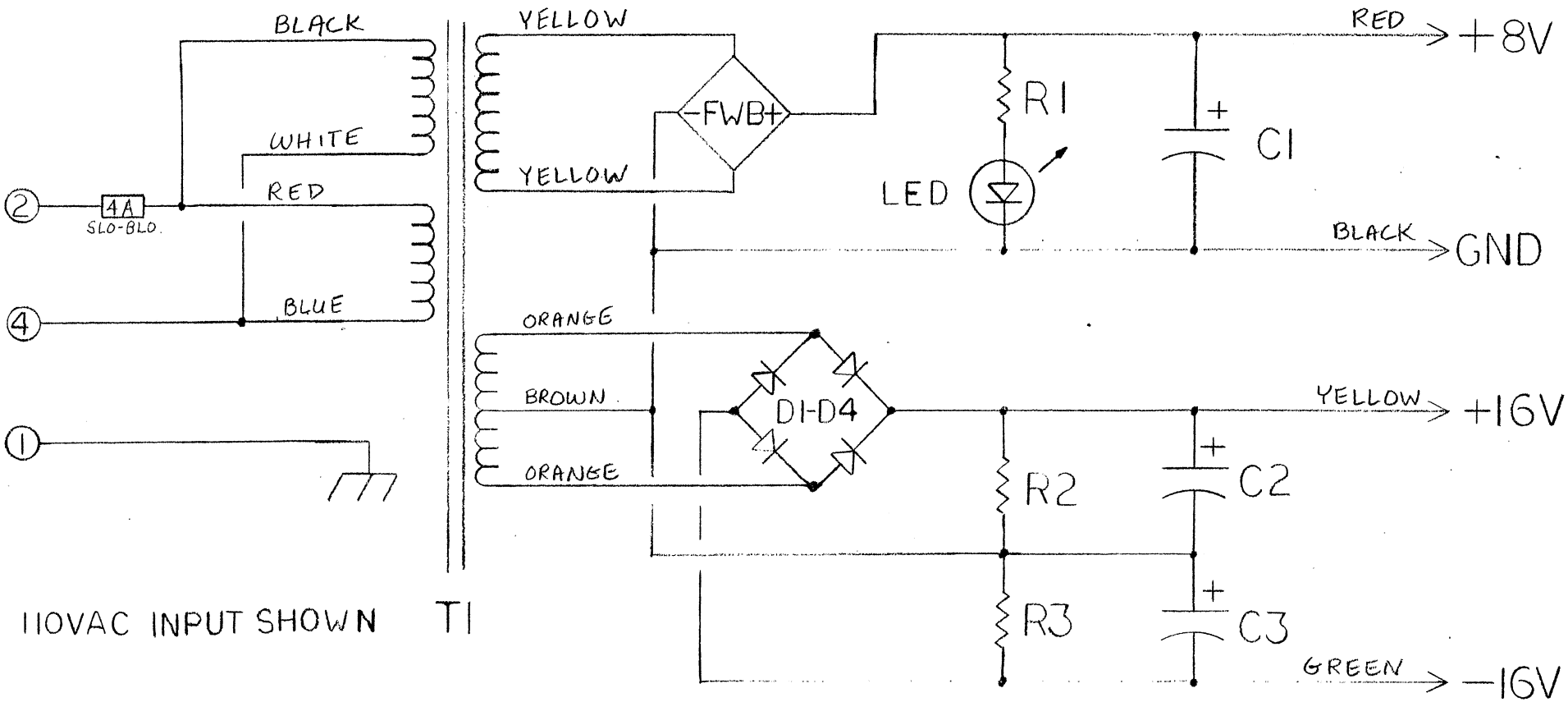
In normal operation your KPPS should be warm to the touch due to a great deal of heat which must be dissipated by the FWB. However, all components have been designed to supply a fully loaded Kimsi board without forced air cooling.

MOUNTING

The KPPS may be mounted using the four mounting holes near each corner of the chassis. Alternately, four rubber feet (included) may be used when the KPPS is free-standing.

FACTORY SERVICE

Should you encounter difficulty in assembly or operation of your supply, we will be happy to assist you either by phone (503/485-8575, 9-5 daily) or by mail (Forethought Products; P.O.Box 386; Coburg,OR 97401). In any event, please do not ship any unit to us until we deem it necessary (we can both save some shipping costs if the problem can be solved thru correspondence).



KIMSI-PLUS POWER SUPPLY

TYPE 4

KPPS PARTS LIST

C1	63,000 - 72,000 MFD, 15V computer grade capacitor
C2-C3	3,300 MFD, 35V capacitor
D1-D4	1N4001 - 1N4005 rectifier
FWB	30A, 50V bridge rectifier
LED	Light Emitting Diode
R1	510 Ohm resistor (green, brown, brown, gold)
R2-R3	1.5K Ohm resistor (brown, green, red, gold)
T1	Power transformer

MISC.

(1)	Terminal strip
(1)	4A SLO-BLO fuse
(1)	Fuse holder
(1)	Power output connector pair

HARDWARE

(1)	Open frame metal chassis
(1)	Capacitor mounting clamp
(1)	Nylon cable clamp
(4)	10/24 screws and nuts
(7)	6/32 screws and nuts
(4)	Nylon PC board mounts

Ring and tab terminals, hookup wire, rubber feet, etc.